

CLAIMS

1. An isolated mite protein comprised of at least about 83 amino acids of the sequence disclosed in SEQ ID NO. 2, an analogue or a functional fragment of said protein.
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2. A protein according to claim 1, wherein said 83 amino acids are the ones disclosed in SEQ ID NO 3.
3. A protein according to claim 1 or 2, which is comprised of at least about 400, such as about 427, amino acids of the sequence disclosed in SEQ ID NO. 2, an analogue or a functional fragment of said protein.
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4. A protein according to claim 3, which is comprised of the last about 427 amino acids of the sequence disclosed in SEQ ID NO. 2, an analogue or a functional fragment of said protein.
5. An isolated nucleic acid encoding a protein according to any one of claims 1-4.
- 15 6. A nucleic acid according to claim 5, the nucleotide sequence of which is substantially identical with bases no 1030-1279 of the sequence disclosed in SEQ ID NO. 1.
7. A nucleic acid which hybridizes specifically under stringent conditions to a nucleic acid according to any one of claims 5-7.
- 20 8. An expression vector which comprises a nucleic acid according to any one of claims 5-7.
9. A recombinant cell comprising a vector according to claim 8.
10. A method for producing a protein, which method comprises the steps of
 - (a) providing a DNA according to any one of claims 5-7;
 - 25 (b) introducing said DNA in an expression vector;
 - (c) insertion of said vector into a suitable host cell;
 - (d) culturing said host cell to obtain the desired protein product; and optionally
 - (e) purification of the protein or polypeptide produced.
11. An antibody raised against a protein according to any one of claims 1-4, or
30 against a functional part thereof.

12. An antibody according to claim 11, which is a monoclonal antibody.
13. Use of a protein according to any one of claims 1-4 in an immunosorbent assay, such as enzyme-linked immunosorbent assay (ELISA).
14. Use of a protein according to any one of claims 1-4 in a screening method
5 wherein compound having the same or similar biological activities as said protein are identified.
15. A method for screening protein or peptide analogues that mimic at least a part of the structure of the protein according to any one of claims 1-4, which comprises the steps of
10 (a) producing a multiplicity of analogue structures and
(b) selecting an analogue structure, wherein the three-dimensional configuration and spatial arrangement of one or more biologically active regions remain substantially preserved.
16. A method according to claim 15, wherein analogues mimicking a protein having
15 the amino acid sequence essentially as disclosed in SEQ ID NO 3 are screened for.
17. An analogue identified according claim 16.
18. A protein according to any one of claims 1-4 or an analogue according to claim 17 for use as a vaccine.
19. Use of a protein according to any one of claims 1-4 or an analogue according to
20 claim 17 in the manufacture of a vaccine preparation.
20. A vaccine preparation comprising a protein according to any one of claims 1-5 or an analogue according to claim 17 and a pharmaceutically and/or veterinary acceptable carrier.
21. A vaccine preparation according to claim 20 for the prevention of *Sarcoptes*
25 mange or scabies.
22. A method of preventing a disease associated with mites, such as *Sarcoptes scabiei*, in a subject, such as a human, canine or porcine subject, which method comprises administration of a preparation according to claim 20 or 21 to said
30 subject in a pharmaceutically effective dose.

23. A method according to claim 22, wherein said disease is sarcoptes mange or scabies.

24. A method for the diagnosis of a mite associated disease comprising the steps of

a) immobilising a protein according to any one of claims 1-4 or an analogue according to claim 17;

b) providing a sample suspected of being infected with said mite associated disease;

c) incubation of said sample with said immobilised protein; and

d) detection of any antibody bound to the immobilised antigen and thus specific for said mite associated disease; whereby a conclusion regarding the diagnosed condition is obtained.

25. A method according to claim 24, wherein the mite associated disease is sarcoptic mange or scabies.

26. A kit for performing the method according to claim 24 or 25.